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IN THE UNITED STATES PATENT & TRADEMARK OFFICE

Application No. 10/612,602	Inventor(s): Bailey et al.
Filed: 1 JULY 2003	Attorney Docket No.: 061501-0003 [formerly 10986-0003]
Customer No. 09629	Confirmation No.: 4808
Title: ELECTRONICALLY CONTROLLED ELECTRIC MOTOR	
Examiner: Masih, Karen	**Art Unit: 2837**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPEAL BRIEF (PURSUANT TO 37 C.F.R. 1.192)

Sir:

(1) Real Party In Interest

The real party in interest is Xidem, Inc., of Carthage, Texas.

(2) Related Appeals and Interferences

There are no other prior or pending appeals, interferences, or judicial proceedings known to appellant, appellant's legal representatives, or assignee that may be related to, directly affect, or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

Thirteen claims were filed with the application; claim 14 has been added and claim 6 has been amended. Claims 1-14 are pending and stand rejected. The rejections of claims 1-14 are being appealed.

(4) Status of Amendments

No amendments were filed after the final rejection and before this Appeal Brief.

(5) Summary of the Invention Defined in the Claims

The claimed invention comprises an improved system and method for controlling an electric motor.

In particular, claim 1 is directed to a system for controlling an electric motor, comprising: an encoder; a central processor in communication with said encoder; a module processor in communication with said central processor; and feedback circuitry in communication with said module processor.

Claim 1 is an original claim, so it provides its own support. Additional support may be found throughout the specification, especially at page 3, lines 1-10.

Claim 2 is directed to the system of claim 1, wherein the encoder is an electronic device that provides rotor and stator positional information to said central processor. Claim 2 is supported throughout the specification, especially at pages 10-14.

Claim 3 is directed to the system of claim 1, further comprising a user interface in communication with the central processor, wherein the user interface enables a user to select preferred operational parameters for an electric motor. Claim 3 is supported throughout the specification, especially at pages 10-14.

Claim 4 is directed to the system of claim 1, wherein the central processor receives rotor and stator positional information from the encoder and rpm values, and transmits differences in latency to said module processor. Claim 4 is supported throughout the specification, especially at pages 10-14.

Claim 5 is directed to the system of claim 1, wherein the module processor receives data from the central processor and, based on that data, controls one or more coils of an electric motor. Claim 5 is supported throughout the specification, especially at pages 10-14.

Claim 6 is directed to the system of claim 1, wherein the feedback circuitry receives data comprising temperature and individual coil conditions and transmits it to the module processor. Claim 6 is supported throughout the specification, especially at pages 10-15.

Claim 7 is directed to the system of claim 1, wherein the central processor comprises a field programmable gate array. Claim 7 is supported throughout the specification, especially at pages 10-15.

Claim 8 is directed to the system of claim 1, further comprising one or more H-bridge circuits in communication with the feedback circuitry. Claim 8 is supported throughout the specification, especially at pages 10-15.

Claims 2-5 and 7-8 are original claims, claim 6 has been amended by adding one word.

Claim 14 is directed to the system of claim 1, wherein said feedback circuitry receives data comprising temperature and coil conditions and transmits it to said module processor, said coil conditions comprising at least one of: coil position, coil angular velocity, and coil state. Claim 14 is supported throughout the specification, especially at pages 10-15.

Independent claim 9 is directed to a method for controlling an electric motor comprising: determining rotor position based on data received from an encoder; determining how to energize stator coils; directing a power module to provide appropriate current to appropriate coils; and monitoring rotor response.

Claim 9 is an original claim and therefore provides its own support. Claim 9 also is supported throughout the specification, especially at pages 10-15.

Claim 10 is directed to the method of claim 9, wherein the step of determining how to energize stator coils comprises consulting a look-up table. Claim 10 is supported throughout the specification, especially at pages 10-15.

Claim 11 is directed to the method of claim 9, wherein the step of determining how to energize stator coils comprises determining which coils to energize. Claim 11 is supported throughout the specification, especially at pages 10-15.

Claim 12 is directed to the method of claim 9, wherein said step of determining how to energize stator coils comprises determining which coils to energize at what times. Claim 12 is supported throughout the specification, especially at pages 10-15.

Claim 13 is directed to the method of claim 9, wherein said step of determining how to energize stator coils comprises determining which coils to energize with how much power. Claim 13 is supported throughout the specification, especially at pages 10-15.

(6) Issues

(A) Whether grounds have been provided for the rejections of claims 7 and 10-13. No Office Actions in this case have mentioned the limitations of those claims.

(B) Whether the Examiner has improperly cited non-analogous references.

(C) Whether the prior art elements relied upon in the Final Office Action may actually be found in the cited references.

(D) Whether the Examiner has cited proper motivations to combine multiple disparate references (five references are relied upon to reject claims 2-8 and 14; three are relied upon to reject claims 9-13 – although claims 10-13 aren't discussed).

(7) Grouping of Claims

Although it is not conceded that the claims on appeal are not separately patentable, for this appeal the claims may stand or fall together for each issue being appealed. Claim 12 is the representative claim for issue (A); claims 1 and 9 are the representative claims for issue (B); claim 1 is the representative claim for issue (C); and claim 2 is the representative claim for issue (D).

(8) Argument

(A) No Grounds Have Been Provided in Any Office Action for the Rejection of Claims 7 and 10-13

The Final Office Action ("Office Action") being appealed rejects claim 7 as unpatentable over as unpatentable over the combination of Labriola, Galecki, Stanton, Giacomini, and Miyanari. Claim 7 requires the elements of claim 1, wherein the central processor comprises a field programmable gate array. The Office Action does not assert that any of the cited references teaches a field programmable gate array of any form, so the rejection of claim 7 should be withdrawn.

Claims 10-13 stand rejected as unpatentable over the combination of Stanton, Miyanari, and Hlavinka. But the limitations of those claims are not addressed in the Office Action, so a rejection of those claims is not supported. Even if independent claim 9 were unpatentable, that would not render dependent claims 10-13 unpatentable. The rejections of claims 10-13 is therefore improper and should be withdrawn.

A prima facie case of obviousness is not established when the cited references, when combined, fail to teach or suggest all of the claim limitations. See MPEP § 2142. No such case is established in the Office Action. .

(B) At Least the Labriola, Galecki, and Hlavinka References are Non-Analogous Art

Labriola is directed to a modular automatic analyzer. An electric motor is incidentally mentioned, but Labriola's system is not in the electric motor field (see, e.g., abstract, and FIG. 1). Galecki is directed to a programmable analog I/O circuit for use in an industrial control system. Galecki is directed to a particular generic control circuit (see, e.g., FIG. 3A), and is not in the electric motor field specifically. Thus, neither Labriola nor Galecki is analogous art to claims 1-8.

Hlavinka is directed to a particle separation method and apparatus, and thus is totally unrelated to Applicants' invention and the problem to which it is directed.

Moreover, the Examiner has ignored Applicants' request to identify the specific field to which Applicants' invention allegedly belongs (i.e., to identify analogous art) and to restrict cited references to that field. See MPEP § 2141.01(a) (Heading): "To rely on a reference under 35 U.S.C. 103, it must be analogous prior art." See also MPEP § 2141.01(a), "Analogy in the Electrical Arts."

(C) The Office Action Cites to Elements That Cannot Be Found in the Cited References.

The Office Action states (at page 4): "Galecki discloses encoder in communication with central processor. In fig 6 #52 discloses central processor, while #56 as discussed in col 12 lines 50-55 discusses how encoder with motor represents I/O as shown in #56."

But Galecki has no Fig. 6. Galecki has Figs. 6A and 6B, which disclose only components numbered 42, 52, 100, 102, 104, 108, 110, 112, 114, and 116. Neither FIG. 6A nor FIG. 6B has an element labeled "56." Indeed, there appears to be no element 56 in Galecki at all (in any of the figures). Further, element 52 is merely a "control-side terminal."

Even though Applicants highlighted the above discrepancy in a previous response, the Office Action failed to correct it, and Applicants still have not been given proper notice of the grounds for rejection of claims 1-8 and 14.

(D) The Office Action Fails to Provide a Proper Motivation to Combine the Cited References.

The Office Action relies upon five different references to reject claims 2-8 and 14. Applicants argued in a previous response that the only apparent motivation to combine those references was to reject those claims – in other words, that the claims had improperly been used as a roadmap to combine the references.

The Office Action responded to that argument by attempting to provide a proper motivation to combine five disparate and in some cases non-analogous references (Labriola, Galecki, Stanton, Giacomini, and Miyanari): "for improved control." See page 3, line 5 of the Office Action.

But the Office Action provided the same motivation ("improved control") for combining Stanton with Miyanari and Hlavinka. See page 3, final line.

Even if such a thin "motivation" were properly relied upon to combine Stanton with Labriola, Galecki, Giacomini, and Miyanari, the exact same motivation cannot properly be relied upon to combine Stanton with Miyanari and Hlavinka. This is a clear indication that the only

reason these references are being combined in various permutations is to reject the claims – i.e., the claims are improperly being used as a roadmap to combine references.

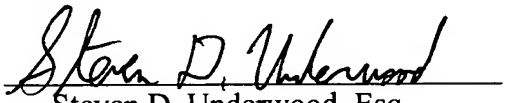
In any event, if the same motivation would only motivate one of ordinary skill in the art to try various combinations of references, then no particular combination can be obvious.

Consequently, the cited references are improperly combined, and the rejections based on those combinations should be withdrawn.

The fee for filing this Appeal Brief is estimated to be $500. Please charge all required fees to Deposit Account No. 50-0310.

Respectfully submitted,

Dated: January 12, 2006



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(9) APPENDIX: CLAIMS ON APPEAL

1. (Original) A system for controlling an electric motor, comprising:

an encoder;

a central processor in communication with said encoder;

a module processor in communication with said central processor; and

feedback circuitry in communication with said module processor.

2. (Original) A system as in claim 1, wherein said encoder is an electronic device that provides rotor and stator positional information to said central processor.

3. (Original) A system as in claim 1, further comprising a user interface in communication with said central processor, wherein said user interface enables a user to select preferred operational parameters for an electric motor.

4. (Original) A system as in claim 1, wherein said central processor receives rotor and stator positional information from said encoder and rpm values, and transmits differences in latency to said module processor.

5. (Original) A system as in claim 1, wherein said module processor receives data from said central processor and, based on said data, controls one or more coils of an electric motor.

6. (Previously presented) A system as in claim 1, wherein said feedback circuitry receives data comprising temperature and individual coil conditions and transmits it to said module processor.

7. (Original) A system as in claim 1, wherein said central processor comprises a field programmable gate array.

8. (Original) A system as in claim 1, further comprising one or more H-bridge circuits in communication with said feedback circuitry.

9. (Original) A method for controlling an electric motor, comprising:

determining rotor position based on data received from an encoder;

determining how to energize stator coils;

directing a power module to provide appropriate current to appropriate coils; and

monitoring rotor response.

10. (Original) A method as in claim 9, wherein said step of determining how to energize stator coils comprises consulting a look-up table.

11. (Original) A method as in claim 9, wherein said step of determining how to energize stator coils comprises determining which coils to energize.

12. (Original) A method as in claim 9, wherein said step of determining how to energize stator coils comprises determining which coils to energize at what times.

13. (Original) A method as in claim 9, wherein said step of determining how to energize stator coils comprises determining which coils to energize with how much power.

14. (Previously presented) A system as in claim 1, wherein said feedback circuitry receives data comprising temperature and coil conditions and transmits it to said module processor, said coil conditions comprising at least one of: coil position, coil angular velocity, and coil state.